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Erector Spinae Plane Block for Chronic Lumbosacral Pain: A Case Report

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Chronic low back pain is a prevalent and debilitating condition that often resists traditional management strategies such as physical therapy, pharmacotherapy, and interventional procedures. The erector spinae plane (ESP) block, a relatively new regional anesthesia technique, has shown promise in managing various types of pain, including chronic conditions. This case report details the use of the ESP block in a male patient in his late 60's with chronic low back pain unresponsive to conventional treatments, including acetaminophen, muscle relaxants, gabapentin, epidural steroid injections, diagnostic medial branch blocks, and sacroiliac joint injections. Given the refractory nature of his pain, a right-sided lumbar ESP block was performed under fluoroscopic guidance. This case highlights the potential of the ESP block as an effective treatment for chronic lumbar pain, particularly in patients who have not responded to other interventional modalities. The safety profile of the ESP block, coupled with its efficacy in this case, supports its consideration as a viable option in chronic pain management. Further studies and clinical experience will be essential in defining its role and establishing standardized protocols for its use in chronic pain settings.

INTRODUCTION

Chronic low back pain is a prevalent and often debilitating condition that significantly impacts patient functionality and quality of life. Traditional management strategies, including physical therapy, pharmacotherapy, and interventional procedures may not always provide adequate relief. The erector spinae plane (ESP) block has emerged as a novel technique for managing various types of pain, including neuropathic and somatic pain complaints. The ESP block has been widely adopted for regional anesthesia and acute pain.¹⁻⁴ This case report discusses the application of the ESP block for chronic pain in a patient with chronic low back pain refractory to conventional treatments.

CASE PRESENTATION

A male patient in his late 60's presented to the chronic pain clinic with persistent low back pain that had been ongoing for several years. His pain was primarily localized to the lumbar region and was associated with significant functional limitations. The patient's medical history included a failure to achieve satisfactory pain relief with physical therapy and multiple medications including acetaminophen, muscle relaxants, and gabapentin. Furthermore, interventional approaches such as epidural steroid injections, diagnostic medial branch blocks, and sacroiliac joint injections

did not provide the desired pain relief. Given the refractory nature of his pain, the patient was considered for an erector spinae plane block as an alternative interventional strategy. After discussing the potential risks and benefits, informed consent was obtained, and the procedure was performed.

The patient underwent a right-sided lumbar ESP block under fluoroscopic guidance. The ESP block was performed at the L4 level, targeting the fascial plane deep to the erector spinae muscle. A spinal needle was advanced until it contacted the L4 transverse process. Next, a total of 9 mL of 0.25% bupivacaine was administered along with 60 mg of triamcinolone acetonide. The needle was then removed. The procedure was well-tolerated, and there were no immediate complications. Fluoroscopic images can be seen in [figure 1](#).

Following the ESP block, the patient reported a significant reduction in his low back pain, with approximately 90% improvement in his pain intensity. In addition to pain relief, the patient also experienced an improvement in lumbar range of motion, which allowed for greater functional capacity. This improvement was sustained over a two-month follow-up period, with the patient continuing to report significant pain relief and improved quality of life.



Figure 1. A spinal needle was advanced down to the transverse process at the L4 level under fluoroscopy.

DISCUSSION

The ESP block is a relatively new regional anesthesia technique that has shown promise in managing various pain conditions.⁵ The mechanism of action is thought to involve the spread of local anesthetic along the fascial planes, leading to the blockade of both the dorsal and ventral rami of the spinal nerves.⁶ This broad coverage makes the ESP block a versatile tool for pain management, particularly in patients who have not responded to traditional interventions.

In this case, the patient's dramatic response to the ESP block highlights its potential as an effective treatment modality for chronic lumbar pain. The sustained relief observed at the two-month follow-up further supports the long-term efficacy of this technique. It is noteworthy that the patient did not respond to other interventional procedures such as epidural steroid injections or medial branch blocks, yet achieved significant pain relief with the ESP

block. This suggests that the ESP block may offer unique analgesic benefits.⁶⁻⁸ Another important consideration regarding the ESP block in this case is its safety profile. Unlike epidural injections, the ESP block is performed outside the spinal canal, reducing the risk of serious complications such as dural puncture or nerve injury.⁹

The ESP block has been increasingly utilized in the management of a wide range of neuropathic pain conditions, demonstrating its versatility as a pain management tool.¹⁰⁻¹⁴ Most of the documented cases have focused on its application for acute pain scenarios or for addressing thoracic neuropathic pain conditions, where it has shown significant efficacy. However, this case stands out due to the unique application of the ESP block for managing chronic lumbosacral pain that proved to be resistant to more traditional interventional pain procedures. The successful outcome in this instance highlights the potential of the ESP block to serve as an effective alternative in cases where conventional methods have failed, suggesting its broader applicability in chronic pain management. This case contributes to the growing body of evidence supporting the use of the ESP block in more complex and refractory pain conditions, expanding its role in the spectrum of interventional pain treatments.

Moreover, performing the ESP block under fluoroscopic guidance highlights its practicality and ease of use for spinal interventionalists who may not be as experienced with ultrasound-guided injections. This case contributes to the expanding body of literature supporting the ESP block's versatility and utility across various pain conditions, further establishing its role in pain management.

CONCLUSION

This case report illustrates the successful use of the erector spinae plane block in managing chronic lumbosacral pain that was unresponsive to both pharmacologic and interventional treatments. The ESP block provided substantial and sustained pain relief, along with improved lumbar range of motion, highlighting its potential as a valuable interventional option for lumbosacral pain. Further research and clinical experience will help to better define the role of the ESP block in chronic pain management.

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